United States Patent and Trademark Office

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,188	12/18/2000	Eric T. Bax		5330

7590	06/22/2004	

ERIC T BAX
PO BOX 60543
PASADENA, CA 91116-6543
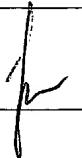
EXAMINER
PALADINI, ALBERT WILLIAM

ART UNIT	PAPER NUMBER
2125	

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

BEST AVAILABLE COPY

	Application No.	Applicant(s)
Office Action Summary	09/740,188	BAX, ERIC T.
	Examiner	Art Unit
	Albert W Paladini	2125

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _18 December 2000_.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-4_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1-4_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
        1.☐ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

BEST AVAILABLE COPY

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2.   Claims 1-4 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Lines 9-10 on page 9 state "Let v be the error score of a basis function over the validation data and let v' be the (unknown) error score over the out-of sample data." The "out-of sample data" is referenced in the specification frequently, but it is not defined. There is no method for identifying the "out-of sample data" in the specification. Since it is necessary for the development of the algorithms generated by Hoeffding, which are the basis of the claims, it must be explained in the specification. Although a paper may be incorporated by reference, the specification must be self-contained so that all of the terms are clearly understood.

Appropriate correction and clarification are required.

Allowable Subject Matter

3.   Claim 1 would be allowable if the specification were rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action.

4.   Claims 2-4 would be allowable if the specification were rewritten to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

5.   The following is a statement of reasons for the indication of allowable subject matter: None of the references cited or the art searched disclose or teach alone or in combination a method to determine a hypothesis function bounded by minimum squared error starting with a basis function, inputs, and uniform error square bounds for the basis functions by forming the quadratic program with variables corresponding to convex combination weights, having the other specific constraint relationships recited in claim 1.

Relevant Prior Art

6.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Palmadesso (6038344) discloses a hyperprocessor system for detecting weaknesses in structures using hypertriangle models, where the vertices of the hypertriangle are the endmembers, and the volume defined by the hypertriangle itself is the locus of all possible mixtures (convex combinations) of endmembers. A shrink-wrap process determines good approximations of the physical constituents of the scene (endmembers), by insuring that the shape and orientation of the hypertriangle conforms as closely as possible to the actual distribution of the data vectors (survivors). The survivors are assumed to be mixtures of the actual constituents. The number of endmembers is equal to the dimension of the Gram-

Schmidt/Salient spanning space. A set of independent quadratic programming problems with linear constraints, which can be solved in parallel using standard methods is used to obtain the unknown constituents.

Hollatz (6269506) discloses a method for recognizing foaming in a washing machine by determining clusters with the aid of a computer. Hollatz also identifies prior art that teaches detection and characterization of cluster substructures using fuzzy sets and complex combination theory, which is achieved by minimization of a sum of quadratic Euclidean distances.

Mallet (6300958) discloses a method and system for mapping a feature onto a simulated surface where each internal node is a convex combination of its neighbors. A functional in a quadratic form, is used for optimization and minimization.

Naylor (6301693) discloses a computer process for creating of IC geometry using equal-weighted convex combination of all well-spread placements is the placement with all cells in the center of the chip. Using numeric analysis terminology, the process converges rapidly to the global minimum of the function, f, if f is a quadratic form with the well-known positive semi-definite Hessian, H, and if H has no negative eigenvalues. As recognized by the present invention, if the function f to be minimized is not a quadratic form, but it is "smoothed" enough, then it can still be locally approximated by a quadratic form and the convergence theory for quadratic forms still holds approximately. Therefore, the present invention smoothes the MOF function in order to ensure faster convergence, to make non-differentiable points differentiable, to handle constraints, and to partially neutralize the effect of local minima.

7.   Any inquiry concerning this communication or earlier communication from the examiner should be direct to Albert W. Paladini whose telephone number is (703) 308-2005. The examiner can normally be reached from 7:30 to 3:30 PM on Monday, Tuesday, Thursday, and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Leo P. Picard, can be reached on (703) 308-0538. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.
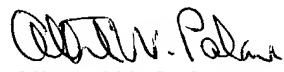
Albert W. Paladini
Primary Examiner
Art Unit 2125

June 18, 2004